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The purpose of this paper has been to argue the usefulness of path-goal models in theoretical research and practical design of organization reward systems. The reasoning is that the policy choices can be easily related to path-goal attitudes which, in turn, are related to behavior. The major policy choices were identified and related to path-goal attitudes. Finally, some research studies illustrating the use of path-goal models were discussed. (Author)

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PATH-GOAL MODELS AS A BASIS FOR THE DESIGN OF ORGANIZATION REWARD SYSTEMS*

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A continuing problem facing all organizations is the influencing of role behavior. A very diverse set of individuals each must choose to join and remain in the organization and must also choose to perform the organizationally required acts. The latter problem -- influencing the decision to produce -- is the concern of this paper. The problem is one of creating a set of conditions under which organizational members reliably and consistently perform behaviors appropriate to the job related situations with which they are faced. Creating this set of conditions is the problem of designing the organization's reward structure. It is for the reward structure design that the path-goal model seems quite useful.

The specific way in which the path-goal model can be useful is illustrated in Figure one. Every organization has choices among policy

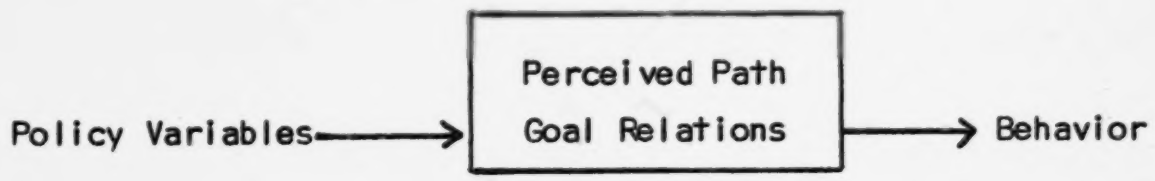

Figure 1. Relationship Between Policy Variables, Path-Goal Perceptions, and Behavior.

variables which can influence the behavior of its members. It can choose among various compensation practices, promotion policies, leadership styles, and job designs. However, the policies do not directly affect behavior. The policies affect attitudes which in turn affect behavior. Thus the understanding needed to design organization reward structures consists of determining how policies affect attitudes and how the attitudes combine to affect behavior. The path-goal model suggests the kinds of attitudes that are important and the relationships between them.

The path-goal model is not the only model of man that could be placed in the box in Figure one. Nor is it always the appropriate one. The possible models range from economic man to complex man (Schein, 1965). Which model is appropriate depends on the decision being made. If a manager is deciding how to conduct a performance appraisal, he needs a complex model of a specific individual. If a plant manager is choosing between an individual wage incentive, a group incentive, or a profit sharing plan, he needs a model which will generalize across his work force. It is for this kind of decision that a path-goal model is appropriate. The remainder of the article consists of three sections. The first section introduces the particular path goal model to be used. This permits the analysis of how the path-goal attitudes determine behavior. The second section suggests the kind of reward policy choices that are analyzable by the model and hypothesizes how attitudes are affected. The last section suggests a research strategy for testing the hypotheses.

Path-Goal Model

The formal model of the path-goal relationship has been stated in several sources (Vroom 1964, Porter and Lawler 1968). Although the variables are given different names they both state that the motivation to produce (effort) is a function of the interaction between the value of rewards (valence), the perceived probability that effort leads to performance (expectancy), and the perceived probability that performance leads to rewards (instrumentality). Therefore variations in motivation can be attributed to variances in reward preferences and perceived probabilities. The important point is that the three attitudes take the form of necessary and sufficient conditions for high motivation. This can be stated in rough equation form as follows:

$$\text{Effort} = f\left(\text{Value of Reward} \times \text{Perceived Effort-Performance Probability} \times \text{Perceived Performance-reward Probability}\right)$$

Porter and Lawler (1968) have expanded this model into a more useable form shown in Figure 2. Like the equation, the schematic shows

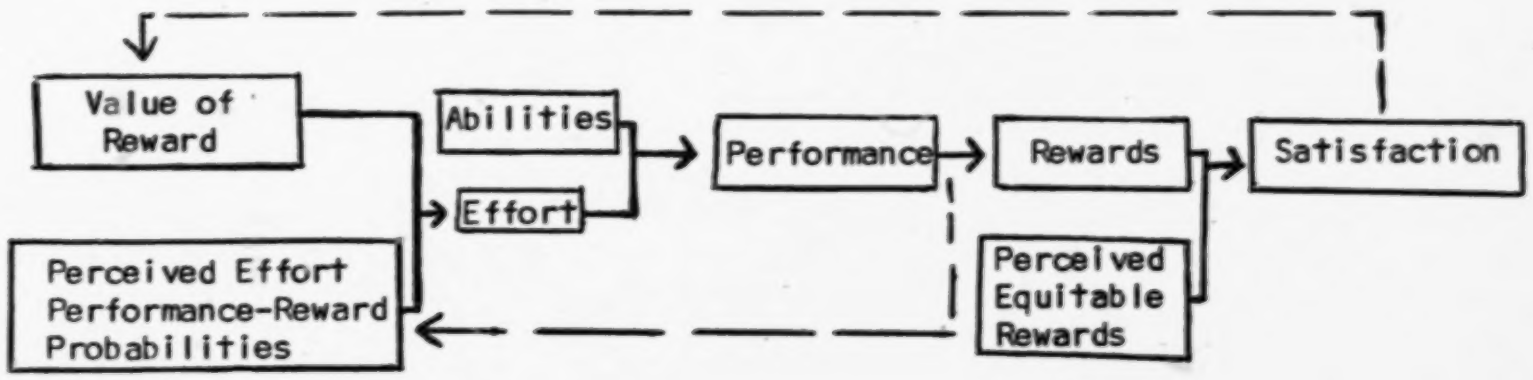

Figure 2. Porter and Lawler Path-Goal Model.

that effort is determined by the multiplicative effect of effort-reward perceptions and the value of reward preferences. In addition, effort and ability interact to affect performance. If rewards follow high performance, the perceived effort-reward probabilities are increased. Whether the rewards lead to satisfaction depends on whether the rewards are close to the expected equitable levels. If satisfaction is achieved, then the value of the reward is increased. This formulation gives the path-goal model a more dynamic basis. Let us now use this model to analyze the choices of reward policies.

Reward Policies, Path-Goal Attitudes and Performance

This section will discuss the kinds of choices that exist among alternative reward policies with respect to compensation, promotion, supervisory practices, and job design and their subsequent impact on performance. Evidence will be quoted when available and hypotheses stated when evidence is lacking.

1. Compensation

The exchange of money in the form of wages, salaries, and bonuses for work performed is the universal method for compensating organizational members for their effort. The policy implications of the path goal model for this economic exchange are relatively straight forward. Money is a valued reward and if it were given on the basis of performance individuals would acquire attitudes concerning effort-reward probabilities such that they would perform at a high level. The evidence reported supports this kind of hypothesis (Georgeopoulos, Mahoney, and Jones 1957, Vroom, 1964, pp.252 and Porter and Lawler, 1968). While this is a useful start it does not completely define the compensation policy. Choices exist on other policy dimensions which have implications for reward values and perceived effort-reward probabilities.

The first issue that arises within a policy based on reward for performance is how much money should be given? What should be the size of the increment or the amount of the piece rate? How much needs to be given before pay can be an incentive? From the model it seems clear that more money is better than less in increasing the value of the reward. This is not always the case. In addition the organization has alternative uses for its funds. The Marketing manager can increase sales by increasing salesmen's commissions, increasing advertising, or by modifying the product design. Our current knowledge cannot yield the marginal benefit of a dollar spent on commissions. Some general statements can be made, however.

First, the size of the increment of money must be large enough to be rewarding. Roy reports that workers on wage incentives with a guaranteed base reduce effort on jobs with tight standards. (Roy 1952)

The workers verbally report that the additional effort required to make incentive earnings was not worth the few dollars difference. The reward, and therefore the performance, could be increased by loosening the standard or raising the piece rate.

However, just as too little money fails as an incentive, it also seems reasonable to expect that increasing the size of the pay increment eventually encounters diminishing returns for any work role. Hypothetically an optimum amount exists somewhere between "too much" and "too little". Galbraith reports how one firm makes this judgmental decision. (Galbraith, 1968). The firm collects salary information by skill categories from all firms in the area and constructs an earnings distribution as shown in Figure Three. The firm then establishes piece rates so that workers earn wages at the 20% mark. That is 20% of the firms pay more in the form of

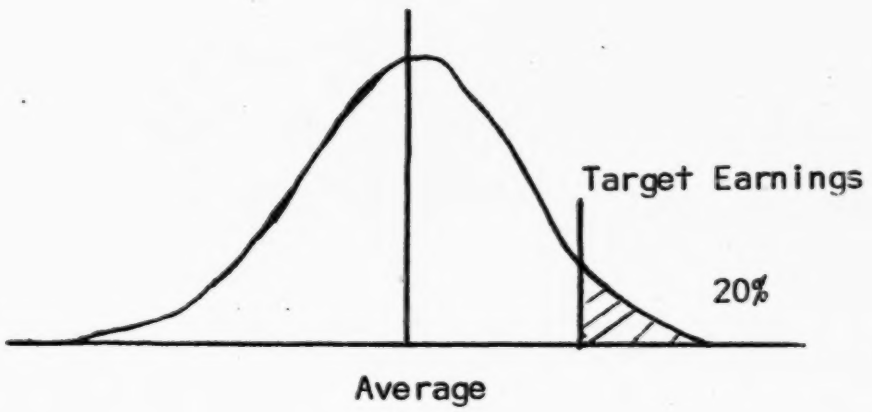

Figure 3. Wage Rate Distribution for a Given Skill

weekly wages. The management believes that the higher wages would not result in an amount of increased production to offset the additional cost. There is no way to demonstrate this but the policy sounds reasonable and is logically based. The policy seems to keep the amount of pay at a rewarding level and is also consistent with the prevailing labor market.

Second, the value of a reward depends on its perceived equity as well as its amount. (Adams, 1965). The same increment in pay given to different work roles can be perceived differently. In order to be rewarding the shoe firm mentioned above feels it must give larger increments for performance to jobs containing safety hazards -- the presence of heat or cutting edges. There is also one study reporting reduced output when subjects operate on a piece rate and feel they are overpaid. (Adams, 1955). This can be interpreted as a reduction in reward value due to perceived inequity. Although there are alternative explanations, the notion that the value of a reward depends on its perceived equity as well as its amount has some merit and should influence the choice of policies regarding the amount of pay to be used to reward performance.

Another policy dimension is the <u>distribution</u> of raises across organization members. For a given size raise budget, the organization can increase its motivational leverage by increasing the variance of the raises around the average size raise and giving the larger raises to the high performers. Various forms of policies have been discussed but there is no evidence for performance or path-goal attitudes (Haire, Ghiselli, and Gordon 1967). It is hypothesized that if raises are given on the basis of performance, then the larger the variance of raises around the average, the greater is the perceived probability that rewards follow performance. If the reward is valued, then the greater the variance, the higher the performance. Also the greater the variance, the greater will be the relation between job performance and job satisfaction due to the increased amount of reward going to the high performer and decreased amount going to the low performer.

Another policy issue concerns the <u>frequency</u> with which rewards are given. Does it make a difference if one large reward is given annually

or if many small rewards are given throughout the year? Does it make a difference if rewards are given on a periodic basis or are given following periods of high performance? Although most organiztions pay periodically, the reinforcement value of pay would seem to be greater for more frequent rewarding immediately following a period of high performance. One can hypothesize that the perceived probability and performance will be greater if the rewards are given more frequently and following a period of high performance. A policy that pays 70% periodically and 30% for frequent performance rewards has been suggested (Opsahl, 1967). The piece rate incentive has quite good reinforcement properties when administered appropriately. However, current salary practice suggests that the reinforcement schedule is designed for accounting convenience rather than motivational reasons.

After the organization has decided upon the amount of pay increments, their distribution across members, and the schedule for their disbursement, the organization must decide upon the <u>form</u> of compensation. Different people have different preferences for the form of their compensation (Nealy, 1963). By permitting members to choose the form of compensation, the organization can increase the value of the reward while holding the amount constant. If compensation is based on performance, choice of form will increase performance. This is not the current practice, although top executive compensation has changed form with changing tax laws.

Another compensation policy is whether to keep individual salary information <u>secret</u>. Lawler's study shows that pay secrecy is associated with underestimating the salary of superiors and overestimating the salary of subordinates and peers (Lawler, 1967). This resulted in dissatisfaction with pay, underestimation of their own performance, and

a belief that job performance is unimportant in determining pay. In terms of the model, secrecy reduces the perceived probability that rewards follow performance. In addition it reduces the value of a promotion which may be contingent on performance. While full disclosure may not be warranted, certainly more pay information would be useful.

The organization also needs procedures for administering the performance measurement process so as not to destroy the motivational effects of the prior pay policy decisions. Thus most wage incentive programs have provisions for machine breakdown, quality variation, lack of materials, etc. Removal of extraneous events increases the perceived probability that effort leads to performance. Likewise many of the cost accounting variance analyses have as their objective the removal of effects of non-controllable variables. Also policies of "never cut the standard" are needed to maintain a high perceived probability that reward follows performance.

This section has discussed several policy variables which require decisions in any compensation plan based on performance. The section followed Porter and Lawler and assumed that pay should be based on performance. Then decisions are required on the amount of the pay increment, the distribution of increments across employees, the schedule of award disbursements, the form of the compensation, and whether or not secrecy would be maintained. The effect of each policy choice on the path-goal relation was discussed or hypothesized. These are summarized in Table One. In addition other administrative procedures were illustrated. The apparent lack of data indicates that compensation policies are a fruitful area for research.

TABLE ONE

Compensation Policies Related to Path-Goal Attitudes

Policy Dimension*	Attitude Affected
1. Degree to which performance is the basis of pay increment	1. Increases Perceived Probability
2. Amount of pay increment	2. Increases value of reward
3. Choice as to form of increment	3. Increases value of reward
4. Variance of increments about the average	4. Increases value of reward and perceived probability
5. Frequency of increment distribution	5. Increases perceived probability
6. Degree of secrecy	6. Decreases perceived probability

*It is assumed that all policy dimensions are increased to produce the related attitude change.

2. Promotion Policies

The path-goal model would predict that promotions based on performance would increase the motivation to perform to the extent that individuals found promotions to be desirable. This is consistent with the evidence (Georgopoulous, Mahoney, and Jones, 1957). Thus if organizations promote on the basis of performance and are clear in their announcements of promotions, they should keep the perceived probability of promotion following performance at a high level. Likewise policies of promotion which are unclear or which are based on seniority or school ties reduce this probability.

One policy dimension whose motivational effects have not been tested is the promote-from-within policy. Organizations have a choice of filling vacancies from their own ranks or going outside the organization. It seems that if promotions are given on the basis of performance, the perceived probability of performance-promotion will be greater for the promote-from-within policy. The probability will be less if prolotions are not given on the basis of performance or if promotions are given to people outside the organization.

3. Supervisory Practices

The organization, consciously or unconsciously, influences the supervisory practices and leadership styles of its managers through its selection, promotion, and training activities. These leadership styles require policy decisions to guide the activities which influence them. For operative workers, it is becoming increasingly important to recognize the reward power of supervisory behaviors. The reason is that wage incentives are at least limited to man-paced jobs that have easily measured output. Promotion tends to be on the basis of seniority

and fringe benefits depend on union bargaining. Leadership behavior is becoming the only component of the organization's reward system which can be made operational across a wide variety of roles and individuals.

The important behaviors seem to be consideration and initiation of structure (Evans, 1968). The greater the consideration shown by a superior, the greater is the value of his reward power. The greater the initiation of structure, the greater is the perceived probability that rewards will follow high performance. This is generally consistent with Evans' finding. Another study reports results indicating that these attitudes interact to determine job behavior. The study showed that high performers valued the considerate behavior of the superior and felt that high performance was needed to receive considerate behavior (Galbraith and Cummings, 1967). The low performers either did not value consideration or did not believe it was related to performance.

There is some evidence that the amount of influence a supervisor has in an organization affects the amount of influence he has with his subordinates (Pelz 1952, Wager 1964). The greater the hierarchical influence of a supervisor, the greater is his reward power. So it is hypothesized that consideration and hierarchical influence combine to determine the value of the reward. Whether this reward power influences performance depends on the supervisor's ability to communicate that high performance is a behavior necessary for the receipt of rewards.

There is also some recent evidence that the same supervisory practices that create valued rewards and positive probabilities that rewards follow performance can also create positive group norms (Kahn 1958, Patchen 1962). For effective performance to become a behavior which is

rewarded by group acceptance, the group members must have shared beliefs that rewards will accompany effective performance. If the supervisor is the primary component of the reward system, positive group norms result if the supervisor is able to deliver rewards, exercises this ability on behalf of his men, and communicates that effective performance is a necessary condition for him to do so. Thus the same practices which influence performance can also influence group norms to reinforce the organization's reward system.

4. Job Design

The fourth major policy variable is the design of the jobs performed by the organization members. The redesign of jobs is usually for the purpose of making high performance intrinsically satisfying. Job enlargement and participation programs are typical attempts to redesign jobs so as to make performance instrumental to the satisfaction of higher order needs.

Path-goal models are also useful for the design of jobs. A job enlargement program or an increase in participation is essentially an expansion of the number of paths to the performance goal. The failure to recognize multiple paths to goals can seriously limit the effectiveness of a reward policy. For example, the purpose of wage incentive schemes is to increase the amount of production. In order to do this, workers are paid in proportion to their output. However, the payment is defined for a given work method designed by someone other than the worker. The assumption on which the reward policy is based is that the worker will be paid in proportion to his effort and the application of physical effort is the only means by which output can be increased. However, output can be increased by a second path -- by discovering a more efficient method of production. Most wage incentive schemes inadvertently penalize

this path by changing the rate. This encourages the withholding of new methods and taking the productivity gain as less effort. Sirota suggests an incentive that rewards performance regardless of the path (Sirota, 1966).

The path-goal model suggests a job design procedure of 1) define the goal to be accomplished; 2) search for all possible paths to that goal; 3) eliminate unfeasible paths; 4) measure and reward performance to guarantee the exploitation of all feasible paths.

Patchen has related participation and job design to achievement motivation. (Patchen 1964). He assumes the following path-goal model:

Motivation to Produce = f	Extent to which achievement in specific work is an important goal	X	Extent to which effort in work situation is perceived as leading to achievement
	(goal)		(path)

Participation can affect both terms on the right side of equation. This can be shown by equations listing determinants for both of these terms.

Extent to which achievement in specific work is an important goal	=	General need for achievement	X	Importance of work role in self-concept	X	Extent to which specific work goals are accepted as important part of work role ↑ participation affects goal acceptance.

Extent to which effort in work situation is perceived as leading to achievement	=	Clarity of performance standards	X	Feedback on performance	X	Goal diffi- culty	X	Control over means to reach goals ↑ participation increases control

This model is based on the theory of achievement motivation rather than empirical research on path-goal. However, it does illustrate the generality of the model.

The purpose of this section has been to identify the major policy variables in the organization's reward structure and relate them to path-goal attitudes and job performance. Table Two completes the list of policy policy variables and their hypothesized effect on path-goal attitudes. Every organization explicity or implicitly makes choices concerning these variables. Collectively they are the major components of the organiztion's reward structure. In order to rationally design a reward structure that is effective, a good deal more information is needed. Until this information is created, the solutions to motivational problems will be dictated by accounting convenience and persistent folklore.

TABLE TWO

Reward Policies Related to Path-Goal Attitudes

Policy Dimension*	Attitude Affected
1. Degree to which performance is the basis of promotion	1. Increases perceived probability
2. Degree to which positions are filled by promotions from within	2. Increase perceived probability
3. Consideration	3. Increases value of reward
4. Hierarchial Influence	4. Increases value of reward
5. Initiation of Structure	5. Increases perceived probability
6. Particiation in decisions	6. Increases value of reward and perceived probabilities

*Policy dimension is assumed to increase to produce the attitude change listed.

Needed Research

The relationships indicated in figure one suggest that the kind of research needed is the empirical testing of causal relations. Figure one implies that reward policies cause attitudes and attitudes cause behavior. However, it is usually quite difficult to conduct causal experiments in organizations and equally difficult to generalize from the more easily conducted laboratory experiments. It is always more convenient and efficient to use correlation studies. While it is often emphasized that correlation does not imply causation, it is often ignored that no correlation does imply no causation. Therefore, correlation studies can be very useful in suggesting which causal relations would be fruitful for further study. This suggests a research strategy of correlation studies followed by causal studies on the more fruitful relationships uncovered in the correlation phase.

One qualification needs to be raised concerning the conduct of the correlation studies. The qualification is that a lack of correlation can be attributed to a lack of a relationship or to an insufficient amount of variation by the independent variable. Therefore, the research design of the correlation studies must guarantee variation in the independent variables - the reward policies. In order to guarantee variation in reward policies one has to conduct a series of comparative studies across organizations with different reward policies. This design allows statements the correlation between policies, attitudes, and behaviors. Some research which illustrates the proposed research design is that by Galbraith (Galbraith and Cummings 1967, Galbraith 1968). This work is limited by the fact that the subjects in all cases were production workers.

This series of studies consists of empirical tests of the path-goal model in three manufacturing firms with different reward systems. Therefore it was hypothesized that the motivational determinants of job performance

would be different. The methodology consisted of measuring the preferences for wages, promotions, fringe benefits, considerate supervisory behavior, and group acceptance. Also measured were perceptions as to whether performance was a path to any of these goals. Variations in performance were hypothesized to vary with the multiplicative path-goal relations for the major rewards.

In the first study, performed at Cummins Engine Co., the path-goal relation for considerate supervisory behavior was the most significant explanatory variable (Galbraith and Cummings 1967). The reason for this is due to the lack of a positive path-goal relation for any other rewards. There was variation in preference for other rewards but performance was not perceived as a path to their attainment. Wages and fringe benefits depended on union bargaining not performance. Promotions were based on seniority and promotion into management ranks was rare. Group norms were neither positive nor negative. Thus the behavior of the supervisor was the only reward that could be given on the basis of performance.

The second study was performed in a New England shoe manufacturing firm. The major differences between this firm and Cummins Engine were a wage incentive program and minimal effort to use supervisory behavior. Other than using a different firm, the experiment was the same. The results showed the wage path-goal relation as the most significant variable. Again this makes sense in the specific situation. The relations between management and worker were not necessarily warm so that consideration was not an important factor. Most of the workers were women for whom promotions are usually denied and of limited attractiveness. Fringe benefits depend on union bargaining. There is the possibility that negative group norms could have formed. However, in the technology of shoe production the work behavior of one individual has little effect on others. The

workers are not interdependent. While this is necessary for wage incentives, it also explains why there was no pressure toward restriction of output.

The last study was performed in another New England shoe company with a wage incentive. However, this firm was noted by the trade association as having a very successful human relations program. The result this time was two significant variables -- the wage incentive and supervisory behavior. Both factors were operating to explain performance variations. As before, most subjects were women explaining why promotion was not important. Fringe benefits were not given on the basis of performance. The same lack of interdependence which prevented negative group norms in the first shoe firm probably prevented positive group norms in this case. The work is independent enough that job performance is not an important behavior to other people.

While these studies do not carry any scientific surprise, they do indicate the kind of inferences that can be made by comparative studies. In no way is it suggested that these comparative analyses replace possible causal studies which permit actual variation of reward policies. Neither is it argued that this is the only approach to the study of causal relations using correlation. Time lagged correlations and causal structure models can also be used. (Blalock, 1964) They can also be used within the comparative study approach described above. The point that can be made is that possible causal relations can be eliminated so that the few causal studies which can be performed can concentrate on the more fruitful relations.

Summary

The purpose of this paper has been to argue the usefulness of path-goal models in theoretical research and practical design of organization reward systems. The reasoning is that the policy choices can be easily related to path-goal attitudes which in turn are related to behavior. The major policy choices were identified and related to path-goal attitudes. Finally, some research studies illustrating the use of path-goal models were discussed.

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